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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,654	11/05/1999	KEVIN J RYAN	303.306US4	4209

7590

12/26/2002

SCHWEGMAN LUNDBERG WOESSNER & KLUTH PA
P O BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

PEIKARI, BEHZAD

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/434,654

Applicant(s)

RYAN, KEVIN J

Examiner

B. James Peikari

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2002 and 22 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-16 and 32-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-16 and 32-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10/15/02 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The previous objections to the drawings under 37 CFR 1.83(a) are withdrawn in view of a proposed Figure 6 included with the amendment of October 15, 2002.
2. The previous objections to the drawing under 37 CFR 1.84(p)(5) are withdrawn due to applicant's July 22, 2002 amendment of the specification to correspond to the drawings.

Specification

3. The previous objections to the specification are withdrawn due to the amendment filed July 22, 2002.

Claim Rejections - 35 USC § 112

4. The previous rejections under 35 U.S.C. 112, first paragraph, are withdrawn due to the inclusion of the required subject matter in proposed Figure 6 included with the amendment of October 15, 2002.

Claim Rejections - 35 USC § 103

- In the amendment filed on July 22, 2002, applicant admitted on page 1 of that record that the contents of Figure 6 (namely a DRAM containing its own row

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decoder, column decoder, data in buffer and data out buffer) is believed to contain no new matter.

Since the disclosure never supported this feature prior to the proposed Figure 6, stating that this feature is not new matter is equivalent to an admission that a DRAM containing its own row decoder, column decoder, data in buffer and data out buffer was prior art.

Furthermore, applicant's submission of pages 2 and 9 of *DRAM Circuit Design* (showing a DRAM containing its own row decoder, column decoder, data in buffer and data out buffer) in a copending application is further evidence that applicant concedes that this feature was prior art.

Consequently, the previous rejection is withdrawn in favor of a new rejection that treats this feature as well known prior art.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13-16 and 32-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama et al., U.S. 5,875,452, in view of Rosich et al., U.S. 5,587,964.

Katayama et al. teach the claimed invention in a memory system (*note especially Figure 9*) comprising:

a memory controller (*note memory controller 17, via controller 70*) with a unidirectional command and address bus (*note that the address and control lines from controller 70 to the decoders are all unidirectional*),

a bidirectional data bus (*note that data line 56 is bidirectional*), a plurality of memory devices, such as eight, (*note the use of up to sixteen exemplary DRAM devices 22*),

a shared command buffer (*note the registers A and B in controller 70, which are connected to each of the plurality of memory devices 22, as explained in column 26, lines 56-57*) coupled between the command and address bus (18; *note that bus 18 comprises, in part, a control bus and an address bus*) and the plurality of memory devices (22) for receiving and latching commands and addresses, and

a shared data buffer (*note data buffer 78*) connected between the plurality of memory devices (22) and the bidirectional data bus (18; *note that bus 18 comprises, in part, a data bus*) for receiving and latching read data or write data.

As for the claimed pipelined packet protocol, note column 2, lines 34 et seq. and column 20, line 6. [As to the meaning of "pipelined subsystems", it is clear from applicant's specification, page 8, lines 27-30, that this means that each subsystem 130 is pipelined within itself. It does *not* mean that each subsystem is one link in a larger pipeline.]

As for the feature of each memory device containing a column decoder and a row decoder, note column 26, lines 51-57.

As for the feature of each memory device containing a data in buffer and a data out buffer, such was not specifically mentioned in the Katayama et al. system. However the benefits of adding additional levels of buffer hierarchies was well known at the time of the invention. It would have been obvious to include data in and data out buffers for each of the memory devices 22 in the Katayama et al. system. In any case Rosich et al. teaches a DRAM device compatible with the Katayama et al. system and which explicitly teaches a data in buffer and a data out buffer associated with the storage array (note, e.g., Figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the DRAM devices of Rosich et al. as the DRAM devices of Katayama et al., since buffers in the Rosich et al. DRAM would have made the timing of the transfer operations to and from the shared buffers more efficient (by latching the data, control or address bits so that such protocols as time sharing could be utilized), especially considering the highly parallel nature of the Figure 9 embodiment of the Katayama et al. system.

At this point it is apparent that the above Katayama et al./Rosich et al. combination teach each and all of the features of *one* of applicant's memory subsystems 130.N. On the other hand, each of applicant's embodiments include a *plurality* of such memory subsystems. In the remarks submitted with the amendment filed January 17, 2002, applicant has now clarified the scope of what is meant by "memory subsystem" (when the specification mentions "each memory subsystem 130" it does *not* mean all of the units which start with "130", it really means "each memory subsystem 130.N", i.e. each *one* of the units surrounded by dashed lines). The combination of references recited above does not specifically mention that memory

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controller 17 could be connected to *more than one* storage device 16. However, the benefits of adding extra memory were quite well known. Whether extra memory devices 16 were added in parallel, series or in some combinations thereof, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add such extra devices to the Katayama et al./Rosich et al. combination since (1) extra memory meant that more data could be stored, (2) several storage devices 16 linked in parallel would have allowed for faster data retrieval via parallel data transfers, (3) it was noted in St. Regis Paper Co. v Bemis Co. 193 USPQ 8 (7th Cir. 1977) that to duplicate parts for multiple effects is *not* given patentable weight, and (4) the suggestion for plural memory devices is *within the Katayama reference itself* (note column 26, lines 30-45) – in this embodiment the DRAM arrays 22 become part of a larger array of up to 16 devices (in column 9, Katayama explicitly states that “it is preferable that the storage device has a plurality of the DRAM arrays”); consequently, the same motivations exist for integrating the storage device 90 into a larger array of such storage devices.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 13-16 and 32-60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 26-28 and 32-57 of U.S. Patent No. 6,286,062. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims have been amended (culminating in the July 22, 2002, amendment) to correspond to the language of the patent.

9. Claims 13-16 and 32-60 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 50-54 of copending Application No. 09/434,731. Although the conflicting claims are not identical, they are not patentably distinct from each other because both are now limited to the use of a single socket.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented. The prohibition against holdings of double patenting applies to requirements for restriction between the related subjects treated in MPEP 806.04 through 806.05(I), namely, between combination and subcombination thereof, between subcombinations disclosed as usable together, between process and apparatus for its practice, between process and product made by

such process and between apparatus and product made by such apparatus, etc., so long as the claims in each case are filed as a result of such requirement.

The following are situations where the prohibition of double patenting rejections under 35 U.S.C. 121 does not apply:

(b) The claims of the different applications or patents are not consonant with the restriction requirement made by the examiner, since the claims have been changed in material respects from the claims at the time the requirement was made. For example, the divisional application filed includes additional claims not consonant in scope to the original claims subject to restriction in the parent. *Symbol Technologies, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 19 USPQ2d 1241 (Fed. Cir. 1991); *Gerber Garment Technology, Inc. v. Lectra Systems Inc.*, 916 F.2d 683, 16 USPQ2d 1436 (Fed. Cir. 1990).

As of the date of this Office action, applicant has neither (1) disputed nor (2) filed a terminal disclaimer to overcome the double patenting rejection. Any response to this Office action which does not contain either of options (1) and (2) above will be held non-responsive.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Peikari whose telephone number is (703) 305-3824. The examiner is generally available on alternate weekdays from 11:00 am to 9:00 pm and on weekends.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim, can be reached at (703) 305-3821.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 746-7239 (Official communications)

or:

(703) 746-7240 (for Informal or Draft communications)

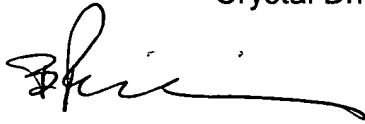
or:

(703) 746-7238 (for After-Final communications)

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Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

A handwritten signature in black ink, appearing to read 'B. James Peikari', with a long horizontal flourish extending to the right.

B. James Peikari
Primary Examiner
Art Unit 2186

December 21, 2002